

Name \_\_\_\_\_  
Period \_\_\_\_\_  
MWF Teacher and Period \_\_\_\_\_

### Unit 4: Energy and the Geosphere Lab-Virtual Earthquakes

Earthquakes are the result of geological activity from deep within the Earth. They are powerful and devastating. In this lab, you will refer the program *Virtual Earthquake* to analyze the same type of data seismologists (scientists who study earthquakes) use in order to determine the epicenter or the origin of an earthquake.

You will use the recordings of an earthquake's seismic waves detected by instruments far away from the earthquake. The instrument recording the seismic waves is called a **seismograph** and the recording is a **seismogram**. The point of origin of an earthquake is called its **focus**, and the point on the earth's surface directly above the focus is the **epicenter**.

You are to locate the epicenter of an earthquake by making simple measurements on three seismograms that will be sent to you by the *Virtual Earthquake* program. Additionally, you will be required to determine the **Richter Magnitude** of that quake from the same recordings. **Richter Magnitude** is an estimate of the amount of energy released during an earthquake.

1. Define the following terms from the reading at the start of the introduction:

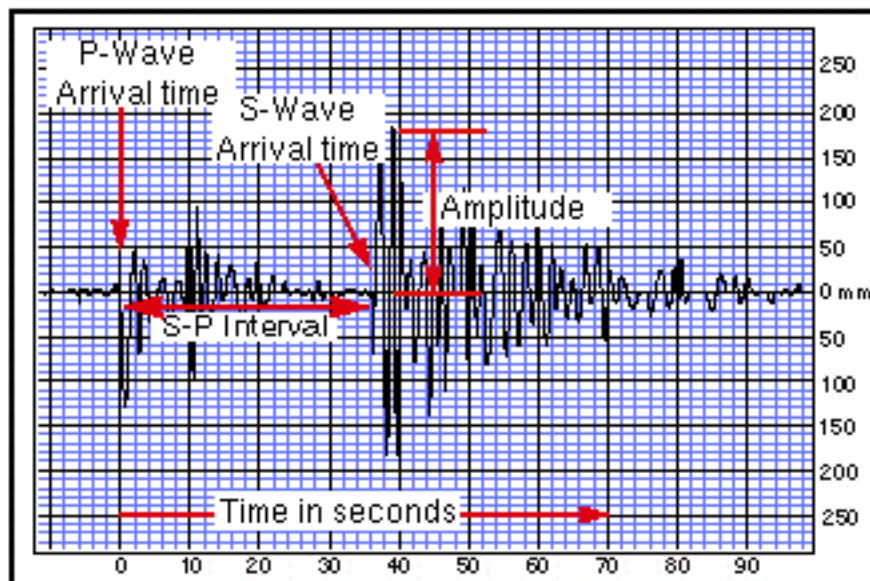
Seismograph →

Seismogram →

Focus →

Epicenter →

2. Look at the following seismogram and answer the 4 questions that follow:



- a. What is the scale of the vertical axis? \_\_\_\_\_
- b. What is the scale of the horizontal axis? \_\_\_\_\_
- c. \_\_\_\_\_ is the time in seconds of the S-P lag?
- d. \_\_\_\_\_ is the amplitude or Maximum S Wave?

**END OF PRE-LAB**

**Table 1:**

<b>Station →</b> (Written under the seismogram)			
<b>S-P Interval</b> (Step 2)			
<b>Epicenter Distance</b> (Step 4)			
<b>Max S Wave</b> (Step 7)			

3. What was the Magnitude of your Earthquake? \_\_\_\_\_

4. Recent Earthquakes

**Table 2:**

	<b>City</b>	<b>Country</b>	<b>Magnitude</b>	<b>Date</b>
<b>1</b>				
<b>2</b>				
<b>3</b>				
<b>4</b>				
<b>5</b>				

Teacher signature of certificate \_\_\_\_\_